CLAIMS

What is claimed is:

1. A method, comprising:

dividing a data table into parts;

distributing data entries in the table arranged in an order to provide periodic empty data entry spaces in each part; and

redistributing data entries in only a part of the table in which an amount of data entries in the part is changed in order to maintain the order of the table without redistributing all the data entries in the table.

2. The method of claim 1, wherein changing the amount of data entries includes one of inserting and deleting a data entry.

3. The method of claim 1, wherein the order is a logical ascending and/or descending order of the entries and a logical origin is assigned to the logically first entry in each part to find the entries in each part regardless of the position of one or more empty spaces in each part.

4. The method of claim 3, wherein the distributing data entries includes moving data entries between parts of the table to maintain a substantially even distribution of the data entries and a substantially even distribution of the empty data entry spaces in each of the parts of the table and reassigning the logical origin of a part to a new logically first entry in the part.

5. The method of claim 1, wherein the distributing data entries is performed substantially continuously.

6. The method of claim 5, further comprising using a balancing engine for the distributing data entries.

7. The method of claim 1, further comprising using a lookup engine to determine a part of the table having a data entry.

8. The method of claim 7, further comprising using an entry engine to send a data entry key to the lookup engine and receive from the lookup engine a number of a part of the table having the location of the data entry.

9. The method of claim 8, wherein the entry engine reads the part of the table corresponding to the number, sorts the entries in the part using one or more empty data entry spaces, and writes the sorted entries back into the part of the table.

10. A method, comprising:

building a table of data entries by arranging the data entries in an ascending order across sections of the table; and

substantially maintaining at least one empty data entry space in each section.

11. The method of claim 10, further comprising using a balancing engine to perform the method.

12. The method of claim 10, further comprising rearranging only a section of the table to maintain the ascending order after inserting or deleting an entry.

13. A method, comprising:

reading a section of a table of data entries arranged in an order that includes periodic empty data entry spaces;

sorting the data entries in the section to insert or delete a data entry; and

writing the section having the sorted data entries into the table.

14. The method of claim 13, wherein the order is a logically ascending order.

15. The method of claim 14, further comprising using an entry engine to perform the method.

16. An apparatus, comprising:

a memory controller coupled to a memory; and

a balancing engine coupled to the memory controller to distribute data entries across sections of a data table including substantially maintaining at least one empty data entry space in each section.

17. The apparatus of claim 16, the balancing engine further comprising:

a dynamic section size allocator to select a size for the sections of the table;

a section count monitor to monitor the number of the sections in the table;

a key entry count monitor to monitor the number of key entries in each section;

a key entry count comparator to compare the number of key entries in one section with the number of entries in at least one other section;

a scan pattern controller to control a pattern for performing the distributing of the key entries across the sections of the table; and

a key entry rippler to move the key entries within a section and/or between the sections.

18. The apparatus of claim 16, further comprising:

a lookup engine coupled to the memory controller to determine a section number of the table containing a given key entry; and

an entry engine to receive the section number from the lookup engine and insert, delete, and/or alter key entries in a section of the table corresponding to the section number.

19. The apparatus of claim 18, the lookup engine further comprising a means for finding a key entry in the table.

20. The apparatus of claim 18, the entry engine further comprising:

a section reader to read a section of the table from memory based on the section number from the lookup engine;

a key entry inserter/deleter to insert and/or delete an entry from the section;

a key entry sorter to sort key entries in the section after a key entry is inserted or deleted; and

a section writer to write the section back into the table in memory.

21. An article of manufacture, comprising:

a machine-readable medium containing content that, when executed, cause an accessing machine to:

distribute data entries in a table arranged in an order to provide periodic empty data entry spaces; and

redistribute data entries in a part of the table in which a data entry was changed to maintain the order without redistributing all the data entries in the table.

22. The article of manufacture of claim 21, wherein the instructions cause the machine to implement an ascending and/or descending ordering of the entries.

23. The article of manufacture of claim 21, wherein a data entry change includes adding and/or deleting a data entry.

24. The article of manufacture of claim 21, wherein the instructions cause a machine to distribute data entries by moving data entries between sections of the table to maintain a substantially even distribution of the data entries and a substantially even distribution of the empty data entry spaces in each of the sections of the table.

25. The article of manufacture of claim 21, wherein the instructions cause a machine to distribute data entries substantially continuously.

26. The article of manufacture of claim 28, further comprising instructions for implementing a balancing engine for the distributing data entries to maintain empty spaces in sections of the table.

27. The article of manufacture of claim 21, further comprising instructions for implementing a lookup engine to determine a section of the table having a location for a data entry.

28. The article of manufacture of claim 27, further comprising instructions for causing the machine to implement an entry engine that reads the section of the table corresponding to the section number, sorts the entries in the section using one or more empty data entry spaces, and writes the sorted entries back into the section of the table corresponding to the section number.